

YEOMANS

**PUMPING
AND
SEWAGE TREATMENT
EQUIPMENT**



SINCE 1898

architects

and engineers

reference

manual

manual no. 1114

for commercial
buildings



for industrial
construction

purpose of catalog

The purpose of this catalog is twofold:

1. To provide you with a basis for comparison of different types of both pumping and waste treatment equipment.
2. To assist you in the preliminary selection of this equipment. Quite often special installations require adaptations from standard units, and in these cases we will gladly furnish you with further detailed information to solve your problem.

Yeomans

Yeomans Brothers Company, established in 1898, builds a complete line of pumping equipment for commercial and industrial building applications—water supply, drainage and sewage removal, condensation return; of pneumatic sewage ejectors; and, of sewage and industrial waste treatment equipment. Each Yeomans unit is built to meet your specifications, backed by more than 50 years of specialized “know-how.”

Since the line of centrifugal and pneumatic pumps and treatment equipment *is complete*, Yeomans can give an

unbiased recommendation as to the equipment best suited for the particular job. Refer to the back cover to learn how you may take advantage of this service.

nation-wide service

Yeomans Sales and Service Organizations are located in most of the major cities in the United States, Canada, and South America. You'll find your local Yeoman's representative just the man you're looking for—he is trained *to understand the problem you expect the pump or waste treatment equipment to solve.*

The Yeomans representative operates, or is a member of, his own business. He handles several excellent lines of equipment in the same market category as Yeomans Pumps. As a rule, he has an engineering degree—and in some instances, he's a capable “engineer by osmosis.” In any case he's a good business man fully qualified to analyze a problem and recommend a practical solution.

You'll find a list of the Yeomans representatives on the back cover. The next time you have a pumping or waste treatment problem, call your Yeomans representative. He's a good man to know.



special service department

At Yeomans service shop personnel and machines are separate from regular production for one reason: to provide prompt efficient service for any unit regardless of production commitments. Yeomans will provide any service required: parts replacement, or rebuilding the unit completely in this shop as your needs dictate. Units can be serviced in the field when required. Your needs, regardless of age of unit or size of part, receive prompt attention.



essentials for selection

The three essentials for a sound approach in selecting any mechanical equipment apply to a pump. When followed, these essentials go far toward guaranteeing the purchase of a pump that will give many years of efficient, dependable service:

- 1. Consider the reputation of the builder—**
When you buy a pump, buy experience and "know-how," not a piece of metal.
- 2. Expect a good maintenance policy—**
A competent nation-wide servicing organization and a conscientious manufacturer are inseparable.
- 3. Give all the facts concerning the application—**
Assemble as much data as possible about the installation and be specific as to what you need.

low motor speed

Lower motor speeds, within limits, mean longer life for your equipment. Pumps run more quietly with less vibration. However, in the interest of economy smaller pumps driven to greater output by high speed motors have proved satisfactory. Wear at high speeds has been considerably reduced by improved pump and motor design. But high speed still means greater wear. Relatively slower speeds mean longer life.

lowest ultimate cost

One must think of the cost of any piece of mechanical equipment in terms of the ultimate or overall cost. The original cost is only part of any installation. Cost of maintaining the equipment must be included, in with the original and installation cost.

In pump selection, especially, original cost is of least importance. A good pump, properly selected, soon makes the original cost unimportant; while an inferior pump can be—and usually is—a constant source of trouble, irritation, and heavy expense.

for handling solids

When sewage and solids-bearing liquids are to be handled, there are two types of pumps to choose from—centrifugal pumps and pneumatic ejectors.

There is no question as to the effectiveness of the centrifugal pump for handling solids-free or *large* quantities of solids-bearing liquids. But as the gallonage scales down, the physical ability of a centrifugal pump to handle solids also decreases, since the openings of an appropriate centrifugal pump are too small to pass the solids.

The ideal solution where gallonage is limited, but solids are not, is the pneumatic ejector.

See pages 7 through 9 for complete details.

the Yeomans guarantee

A successful pump installation depends not only on excellent workmanship, but just as much on care in installation. Both must be of the highest type for the maximum efficiency and reliable service.

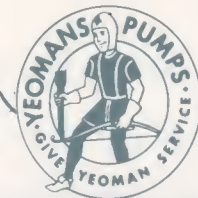
In Yeomans pumps both are assured—by skillful manufacture and by a thoroughly experienced service organization.

The high standards of manufacture and quality materials make it possible for Yeomans Brothers Company to assume full responsibility for the satisfactory operation of any Yeomans pump installed according to recommendations. The integrity and reliability of the Company make the obligation valid.

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| PUMP TYPE | DESCRIPTION | MODEL |
|--|--|--|
| VERTICAL WET PIT PUMPS | Heavy Duty—Screenless | Series 8000 |
| | Heavy Duty—With Screen | Series 3000 |
| | Top Suction | Series 3100 |
| | Pedestal-Mounted | Drain-Dri |
| | Cellar Drainer | Type "CD" |
| PNEUMATIC AND STEAM SEWAGE EJECTORS | Shone—Mechanical Control | SDV, S, SAC |
| | Shone—Electrode Control | SEC, "Package" |
| | Electrode-Control | Expelsor "Package" |
| | Electrode-Control | PACKEX |
| | "U" Tube | Pneu-Pump |
| | Electrode-Control | Transporter |
| COMPRESSORS, GAS BOOSTERS, VACUUM PUMPS | Rotary, Multi-Vane | Standard and #545 |
| CENTRIFUGAL SEWAGE AND SLUDGE PUMPS | Horizontal Non-Clog | Series 6150, 6100, 6115, 6110 |
| | Vertical, Dry Pit, Non-Clog | Series 6250, 6200, 6260, 6235 |
| "PACKAGE" SEWAGE LIFT STATIONS | Pneumatic Ejector or Centrifugal Type | |
| WATER CIRCULATING AND BOOSTER PUMPS | End Suction, Close-Coupled | Motopump |
| | End Suction, Flexibly Connected | DBB |
| | End Suction, Flexibly Connected | Turbine Type |
| | Split Case, Double Suction, Single Stage | HSD |
| | Split Case, Multi-Stage | YB |
| CONDENSATION RETURN PUMPS | Submerged—Heavy Duty | V |
| | Submerged—Lighter Duty | Hi-Lo |
| | Floor-Mounted | VCI |
| | Floor-Mounted | HCS |
| | Floor-Mounted | Turbine |



| APPLICATIONS — COMMENTS | PAGE NUMBER AND/OR BULLETIN NUMBER |
|--|--|
| For toilet wastes with other basement drainage in buildings—process wastes with solids in industry. <i>〈Special Designs and Materials of Construction Available〉</i> | Pages 10 & 12 Bulletin 8007 |
| Suitable for most any application where this general type of pump is required, modified to meet job conditions. Will not pass solids larger than screen. | Pages 10 & 13 Bulletin 3007 |
| Intermediate duty on relatively long cycles or light duty when G.P.M. exceeds Drain-Dri range. For all normal drainage and waste water (no solids or abrasives) applications. Float control. | Pages 11 & 12 Bulletin 3102 |
| Intermittent operation handling basement seepage and some drainage (water relatively free of grit, solids). Special constructions include "diving bell" for cable vault service. | Pages 11 & 13 Bulletin 3215 |
| General residential cellar drainer service—Displacement control. | Bulletin 3251 |
| Heavy duty service in better class public buildings—or as sewage lift stations—where freedom from clogging and excessive maintenance are prime requisites. Most trouble-free pneumatic ejectors available. | Pages 8 & 9 Bulletin 4005 |
| Recommended for installations comparable to Shone "SDV" when electrode control is preferred. | Pages 8 & 9 Bulletin 4304 |
| Low first cost but greater freedom from clogging and maintenance than possible with a low-gallnage centrifugal pump. Suitable for public and industrial buildings and lift stations. | Pages 8 & 9 Bulletin 4407 |
| Trouble-free handling of toilet wastes in small buildings. Maximum capacity (buildings) 20 G.P.M.—Lift stations for 10 homes. | Pages 8 & 9 Bulletin 4421 |
| Low-volume drainage in buildings—transfer of problem materials—acids, slurries, oil, mud, etc. | Bulletin 4601 |
| Economical, mechanical batch delivery of bulky, semi-dry materials. | Bulletin 4501 |
| Suitable for direct connection to motor, gasoline engine, belt or other form of drive. For pressures up to 50 lb. gauge and vacua up to 90-95% of barometer. Recommended for all Yeomans pneumatic ejectors. Not suitable for wet vacuum. | Bulletin 7205 Bulletin 7245 |
| Heavy duty service in industrial and municipal waste removal or lift stations. Large capacities, high heads. Preferred by many engineers for maintenance ease. | Bulletin 6152 |
| Heavy duty, large capacity—high head, units for industrial and municipal waste removal or lift stations. Close-coupled (6235) and motor mounted (6260) units for limited floor space. Enclosed shaft or open shaft units for dry pit installations when it is desirable to keep pump primed at all times with motor mounted at or near grade or floor. | Bulletin 6252 |
| Rapidly gaining popularity especially for subdivisions, trailer parks, isolated institutional and industrial areas because of ease and economy of installation. Both pneumatic ejectors and centrifugal pumps are available—for standard or complete underground installation. | Pages 14 & 15 Bulletins 4304, 4407 & 6252 |
| Minimum floor space. Horizontal unit. Capacities 10-1200 G.P.M., heads of 10 to 200 ft. Known for long life, maintained efficiencies. | Bulletin 1120 |
| No rubbing clearances—long lived—maintains efficiency. Capacities of 10 to 1200 G.P.M. Discharge heads up to 200 ft. | Bulletin 1022 |
| Usually lowest in cost, most efficient on high heads. Capacity range of 1 to 120 G.P.M. Discharge heads up to 500 ft. | Bulletin 1403 |
| Balanced hydraulic thrust bearing each side of impeller, may be disassembled without disturbing pipe connections. Capacities 100 to 6000 G.P.M. Heads of 30 to 300 feet. | Bulletin 1602 |
| Advantages of design similar to single stage unit—capacities 75 to 700 G.P.M. Heads 175 to 400 ft. | Bulletin 1701 |
| Vertical, mounted below floor level. Standard units for normal intermittent duty on heating service. Special units for continuous or process service. E.D.R. maximum 100,000 sq. ft. | Bulletin 5503 |
| Vertical mounted below floor level. For low pressure heating systems. E.D.R. maximum 30,000 sq. ft. | Bulletin 105 |
| Vertical, for low pressure heating system. E.D.R. maximum 10,000 sq. ft. | Bulletin 5601 |
| Horizontal, for all but very high pressure duty in buildings, industry. Maximum E.D.R. 65,000 sq. ft. | Bulletin 5400 |
| Horizontal. For low pressure building service and high pressure industrial systems. Maximum E.D.R. 10,000 sq. ft. | Bulletin 5302 |

determining capacities

Y E O M A N S

factors in pump selection

Service conditions alone determine the exact pump for a given duty; however, for wet pit pumps factors influencing the decision are: (1) nature of area to be drained; (2) type of suspended matter in the liquid to be pumped; (3) distance below sewer level; (4) extent of waterproofing in basement.

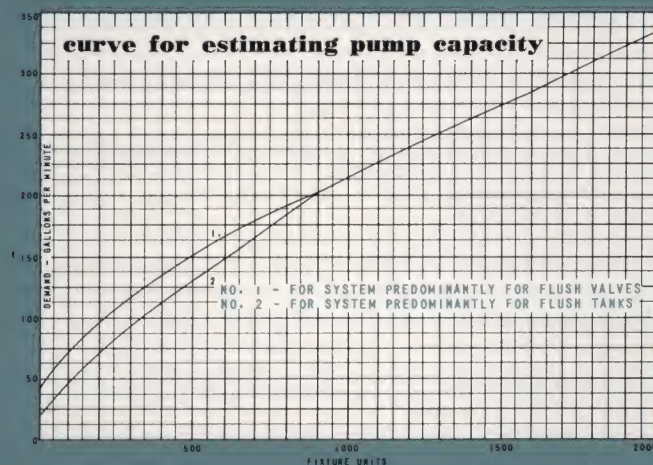
The safety of property and equipment may depend upon the ability of the pumps to dispose of drainage,

therefore, a large safety factor should be included to offset the unexpected. Unusual flood conditions can tax a pump beyond its ability to deliver.

First and absolutely necessary determinants are: (1) amount of drainage to be pumped in gallons per minute; and, (2) discharge head—the height to which the drainage must be pumped.

table for rating fixture units

| Fixture and Type of Installation | Number of Fixture Units | |
|---|-------------------------|---------|
| | Public | Private |
| Lavatory or Wash Basin | 2 | 1 |
| Water Closet—flush valve | 10 | 6 |
| —flush tank | 5 | 3 |
| Urinals—pedestal, flush valve | 10 | .. |
| —wall or stall, flush valve | 5 | .. |
| —wall or stall, flush tank | 3 | .. |
| Bath Tub | 4 | 2 |
| Bathroom Group—flush valve supply | .. | 8 |
| —flush tank supply | .. | 6 |
| Separate Showerhead | .. | 2 |
| Kitchen Sink | 4 | 2 |
| Service Sink | 3 | 3 |
| Laundry Trays (1 to 3) or Combination Fixture | 3 | 3 |



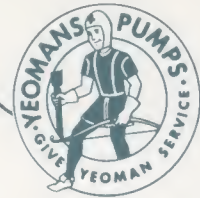
friction of water in pipes used in figuring discharge heads

Velocity in Feet Per Second—Friction Loss in Feet Per 100 Feet of Pipe

| Nominal Pipe Size in Inches Wrought Iron or Steel* | | GALLONS PER MINUTE | | | | | | | | | | | | | | |
|--|---------------|--------------------|------------------|------------------|------------------|------------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|
| | | 40 | 50 | 75 | 100 | 150 | 200 | 240 | 300 | 400 | 500 | 600 | 750 | 1000 | 1500 | 2000 |
| 1½ | Fric. Vel. | 10.79 6.30 | 16.4 7.88 | 35.8 11.8 | 62.2 15.8 | 137 23.6 | 241 31.5 | | | | | | | | | |
| 2 | Fric. Vel. | 3.10 3.82 | 4.67 4.78 | 10.1 7.17 | 17.4 9.56 | 38.0 14.3 | 66.3 19.1 | 95.0 22.9 | 146 28.7 | 258 38.2 | | | | | | |
| 2½ | Fric. Vel. | 1.28 2.68 | 1.94 3.35 | 4.13 5.03 | 7.11 6.70 | 15.4 10.05 | 26.7 13.4 | 38.1 16.1 | 58.5 20.1 | 103 26.8 | 160 33.5 | 230 40.2 | | | | |
| 3 | Fric. Vel. | 0.443 1.74 | 0.662 2.17 | 1.39 3.25 | 2.39 4.34 | 5.14 6.51 | 8.90 8.68 | 12.6 10.4 | 19.2 13.0 | 33.9 17.4 | 52.5 21.7 | 74.8 26.0 | 116 32.5 | 204 43.4 | | |
| 4 | Fric. Vel. | 0.118 1.01 | 0.176 1.26 | 0.370 1.89 | 0.624 2.52 | 1.32 3.78 | 2.27 5.04 | 3.21 6.05 | 4.89 7.56 | 8.47 10.10 | 13.0 12.6 | 18.6 15.1 | 28.6 18.9 | 50.2 25.2 | 112 37.8 | 196 50.4 |
| 5 | Fric. Vel. | 0.0395 0.641 | 0.0587 0.802 | 0.1223 1.20 | 0.204 1.60 | 0.433 2.41 | 0.736 3.21 | 1.035 3.85 | 1.58 4.81 | 2.72 6.41 | 4.16 8.02 | 5.88 9.62 | 9.05 12.0 | 15.8 16.0 | 34.8 24.1 | 61.0 32.1 |
| 6 | Fric. Vel. | 0.0164 0.444 | 0.0244 0.555 | 0.0504 0.832 | 0.0843 1.11 | 0.176 1.66 | 0.299 2.22 | 0.419 2.66 | 0.637 3.33 | 1.09 4.44 | 1.66 5.55 | 2.34 6.66 | 3.57 8.33 | 6.17 11.1 | 13.5 16.7 | 23.8 22.2 |
| 8 | Fric. Vel. | 0.00442 0.257 | 0.00652 0.321 | 0.0135 0.481 | 0.0224 0.641 | 0.0465 1.09 | 0.0780 1.28 | 0.1088 1.54 | 0.163 1.92 | 0.279 2.57 | 0.424 3.21 | 0.597 3.85 | 0.907 4.81 | 1.56 6.41 | 3.37 9.62 | 5.86 12.8 |
| 10 | Fric. Vel. | 0.00149 0.163 | 0.00226 0.203 | 0.00404 0.284 | 0.00747 0.407 | 0.0155 0.610 | 0.0260 0.814 | 0.0362 0.976 | 0.0542 1.22 | 0.0917 1.63 | 0.138 2.03 | 0.192 2.44 | 0.291 3.05 | 0.500 4.07 | 1.07 6.10 | 1.86 8.14 |
| 12 | Fric. Vel. | | | | 0.00325 2.87 | 0.00668 0.430 | 0.0111 0.573 | 0.0155 0.688 | 0.0233 0.860 | 0.0391 1.15 | 0.0587 1.43 | 0.0820 1.72 | 0.124 2.15 | 0.210 2.87 | 0.450 4.30 | 0.776 5.73 |

NOTE: No allowance has been made for age, differences in diameter, or any abnormal condition of interior surface. Any factor of safety must be estimated from the local conditions and the requirements of each particular installation.

*Multiply by approximately 1.2 for asphalt-dipped cast iron.



how to determine capacity

The required pump capacity (demand) in gallons per minute for any type of building pumping system is determined as follows:

1. Estimate the total number of fixture units of the plumbing fixtures in the building to be served by the pump by consulting the table on page 6.
2. Determine the demand in gallons per minute for the total fixture units from the curve.
3. Adjust estimate of the supply demand according to special requirement, increasing pump capacity for fixtures requiring more than ordinary quantities of water, such as cooling water for condensers or refrigerating machinery; continuously running fixtures found in metal plating plants; photographic and blueprint shops; and, similar applications.
4. Make adjustments for the type of service required for the pump, i.e., additions for sub-surface seepage and drainage in sewage and drainage systems, etc.

how to determine discharge head

To arrive at the discharge head of a pump or ejector, measure the distance from the bottom of the sump or catch basin to the highest point in the discharge line to the sewer. This is the static head. Then add the friction loss in the total length of discharge pipe, both horizontal and vertical, plus fittings and valves, which can be determined in feet from the friction table on page 6. This gives the total dynamic head.

determining depth of basin

To allow ample storage of drainage, etc., provide at least 3 feet of depth below lowest inlet to the catch basin or sump. This will allow reasonably long cycles of pump operation and idleness. It will eliminate too-frequent starting and stopping of apparatus, which causes unnecessary wear and reduces the life of the equipment.

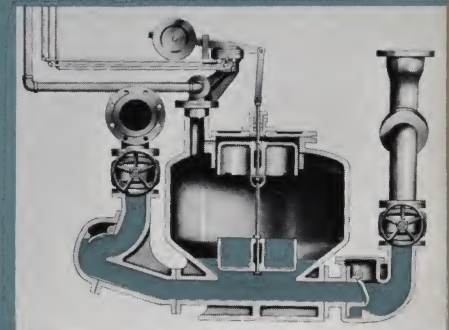
A typical basement diagram of a pump installation with drainage and sewage connections showing the correct use of a settling basin appears on page 11. To prolong pump life, the use of a settling basin is recommended where the pump handles sub-surface drainage.

pneumatic ejector

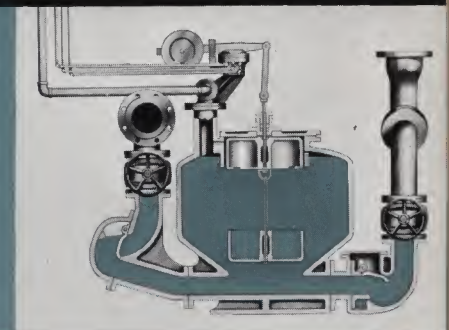
The simple mechanical operation of a Shone Pneumatic Ejector is accomplished by the rise and fall of two open cast iron bells or floats. Through a pilot valve the motion of the bells actuates a piston valve that admits compressed air to the receiver and pushes the liquid waste out and up through the discharge line.

The positive motion of the bells is as simple as the law of gravity itself.

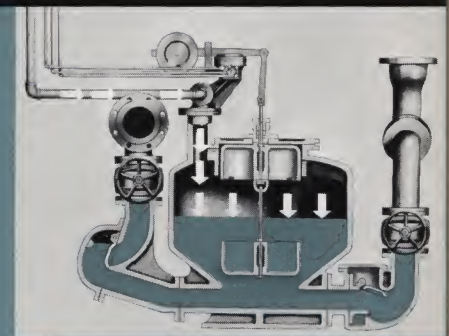
In the filling position, the receiver is vented to atmospheric pressure and bells are in the lower position. Weight of incoming liquid holds inlet check valve open, while the weight of liquid in lift line holds discharge check valve closed.



As receiver is filled, the bells are buoyed by weight of water displaced, exerting less weight on the pull rod. The counterweight lowers, shifting the pilot valve and piston valve.

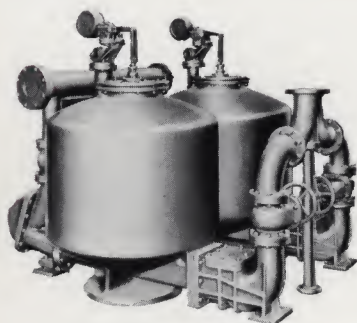


Compressed air is admitted, forcing the liquid up and out through the lift line. As liquid level falls below lower bell, its added weight on pull rod overcomes counterweight. Compressed air is shut off and the receiver again is vented to atmospheric pressure.

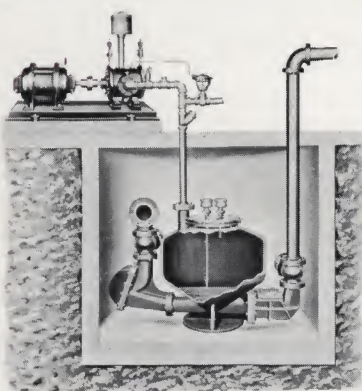


pneumatic

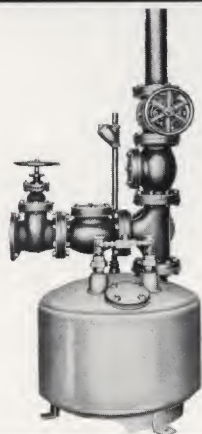
ejector types



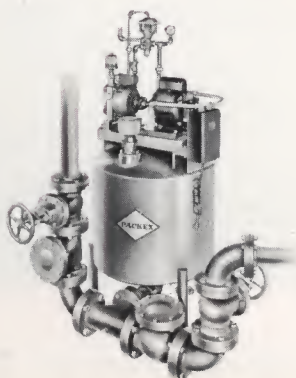
SDV, S, SAC TYPE The SDV is the standard mechanically controlled type of Shone® Ejector, and commonly recommended for all installations—municipal, building, industrial. The piston valve is mounted on a heavy cast iron stand or wall bracket where it is readily accessible. Pilot valve in the pit has no sewage connection with the ejector receiver. SDV Type ejectors can be furnished only for stored air systems. Where there is a limited amount of head room, the S Type is recommended. These units have a combined piston and pilot valve mounted on the receiver. The SAC Type ejector, a tankless unit, is recommended when space limitations prevent the installation of an air storage tank. In operation and construction, the SAC Type is similar to the SDV ejector.



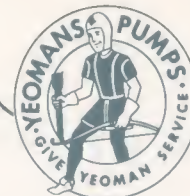
SEC TYPE The Shone, SEC Type, is an electrically controlled ejector. The compressor is mounted separately on a slab above the ejector, on the floor above the pit or at any convenient remote point. The SEC ejector can be furnished for stored air and for tankless system installations. It is furnished complete with automatic positive floatless control. Shone non-clogging check valves and standard gate valves are provided for inlet and discharge. There are no moving parts in or on the receiver . . . nothing to jam or clog. Yeomans also can furnish a Shone, Package Type Ejector which is a complete factory-assembled unit with built-in automatic controls. See page 15.



EXPELSOR® An Expelsor pneumatic ejector is comparable in first cost and installation dimensions to the small so-called "non-clog" centrifugal pump. Here the comparison ends, for in terms of simplicity, effectiveness, economy of operation and maintenance the Expelsor excels. Expelsors are available for either stored air or tankless system installation. Control consists of electrodes and operation is like an electrode-controlled Shone ejector. Receivers are of welded steel, hermetically sealed. Capacities range from 30 to 600 g.p.m. Package Type Expelsor units—complete with ready-mounted air compressor—also are available. See page 15.



PACKEX® The PACKEX ejector is suitable for small building and subdivision lift stations where the sewage flow does not exceed 20 g.p.m., and the head not over 20 ft. PACKEX is suitable for small apartments, offices, schools to serve up to 30 fixture units; and in residential areas, up to 10 homes. The unit is factory-assembled, complete with rotary sliding vane air compressor, ready for inlet and discharge connections. All electrical elements are moisture proof, and the unit operates from standard house current. Control is by electrodes, receiver is hermetically sealed steel pot.



how to select...

to select a pneumatic ejector

When selecting a Shone Ejector, Expelsor, or PACKEX, there are two decisions to be made: the type of control—mechanical or electrical; and the type of system—stored air (furnished with an air storage tank) or tankless.

In a stored air system, the compressor is controlled by a pressure switch and is independent of ejector. In a tankless system, the compressor discharges directly into the receiver and is controlled by the ejector.

Advantages of a stored air system include: use of a smaller air compressor; any number of ejectors can be operated by any number of compressors; air capacity is available from one storage tank for more than one ejector, for unusual peak load demands, and for other purposes as heat regulation, medical equipment, etc.

The demand in gallons per minute for a Shone Ejector, Expelsor, or PACKEX installation is determined in the same manner as for a Series 8000 Vertical Centrifugal Wet Pit Pump. Follow steps outlined on pages 6 and 7—using fixture-unit table and graph. Selection table for Shone Ejectors (SDV, S, SAC, SEC) and Expelsors appears below.

subdivision installations

Estimate the capacity in g.p.m. of the ejector(s) on the basis of population to be served, allowing 100 g.p.d. per capita with one-half of daily flow running off in 8 hours.

For example, assume a residential development of 100 homes:

| | |
|--------------------------------------|-----------|
| Average family size | 5 |
| Estimated population | 500 |
| Estimated sewage flow | 50,000 |
| (based on 100 g.p.d. per capita) | |
| One-half daily flow in 8 hours | 3,125 |
| Ejector capacity required | 52 g.p.m. |

Determine discharge head by figuring height of discharge pipe from bottom of basin to the highest point in sewer line plus friction loss in pipe (flow rate is double ejector capacity). The possibility of unusual peak loads, or increases in populations, makes it advisable to install such equipment in duplex, or at least make provision for second unit.

selection chart Shone Ejectors (SDV, S, SAC, SEC) and Expelsors

Compressor motors are 1150 r.p.m. unless marked (†), which denotes 1750 r.p.m.

notes:

| Cap. in G.P.M. | Stored Air System ¹ | | | Tankless System ² | | Overall Dimensions | | | |
|----------------------|--------------------------------|-------------------------|---|----------------------------------|----------------------------------|------------------------------------|---|--|---------------------|
| | Max. Head in ft. | Compr. Motor H.P. | Air Tank ³ Max. Dia. & O.A. Length | Max. Head in ft. | Compr. Motor H.P. | Height of Units ⁴ | Depth of Pit Below Invert of Inlet ⁴ | Size of Pit Round or Rectangular ⁵ | |
| | | | | | | | | Single | Duplex |
| 30 | 10 40 50 | 1½ 2 3 | 30"x60" | 30 50 | 1½ 3† | 5'0" 3'8½" 2'8¾" | 3'1" 3'1" 2'6¾" | 6'0"φ 6'x3'6" | 8'0"φ 6'x7' |
| 50 | 10 40 50 | 1½ 2 5 | 36"x84" | 10 30 50 | 1½ 3† 5 | 5'0" 3'8½" 3'3¾" | 3'1" 3'1" 3'1¾" | 6'0"φ 6'x3'6" | 8'0"φ 6'x7' |
| 100 | 10 30 50 | 1½ 3† 7½ | 42"x96" | 10 20 40 50 | 3† 5 7½ 10 | 5'9" 4'2" 4'9¾" | 3'7" 3'7" 4'6¾" | 7'0"φ 7'x4' | 9'0"φ 7'x8' |
| 150 | 15 30 40 50 | 3† 5 7½ 10 | 48"x120" | 15 25 40 50 | 5 7½ 10 15 | 6'7" 4'11" 4'0¼" | 4'0" 4'0" 3'8¼" | 7'0"φ 7'x4' | 9'0"φ 7'x8' |
| 200 | 20 40 50 | 5 10 15 | 54"x120" | 10 20 30 40 50 | 5 7½ 10 15 20 | 7'2" 5'9" 4'7" | 4'7" 4'7" 4'3" | 8'0"φ 8'x4'6" | 10'0"φ 8'x9' |
| 250 | 10 20 40 50 | 5 7½ 10 15 | 60"x120" | 15 25 30 50 | 7½ 10 15 20 | 6'4" 5'1" 5'3½" | 4'1" 4'1" 4'11½" | 9'3"φ 9'3"x5' | 10'6"φ 9'3"x9'3" |
| 300 | 20 25 40 50 | 7½ 10 15 20 | 60"x120" | 10 20 30 35 45 50 | 7½ 10 15 20 25 30 | 6'10" 5'7" 6'0" | 4'7" 4'7" 5'8" | 9'3"φ 9'3"x5' | 10'6"φ 9'3"x9'3" |

① Only "SDV", "S" and "SEC" type Shone Ejectors and Expelsors can be furnished for Stored Air System installations.

② Only "SEC" and "SAC" type Shone Ejectors and Expelsors can be furnished for Tankless System installations.

③ Air storage tanks required only for Stored Air Systems. Dimensions are maximum diameter and overall length for size unit listed. See Manual 4000-C2 for tank dimensions for specific g.p.m. at given head. ADD 6" for vertical tank length.

④ First dimension is "SDV", "SAC", and "S", second is "SEC", and third is Expelsor.

⑤ Dimensions apply to all Shone Ejectors. Expelsor pit diameter is minimum of 4'-0" for Single units, 6'-6" for Duplex through 100 g.p.m.; 5'-0" for Single and 8'-0" for Duplex from 150 through 300 g.p.m.

wet pit submerged centrifugal pumps

In many localities street sewers are higher than basements, making it necessary to elevate waste water and seepage into the sewers. This is particularly true in large city building where sub-basements may extend far below the level of streets and sewers. Yeomans vertical wet pit pumps serve extensively in this kind of duty.

When heavy duty service is required for handling liquids containing solids, Series 8000 Screenless Sewage Ejectors are recommended; for handling liquids without solids, Series 3000 Bilge Pumps.

The most critical point in the design of a wet pit submerged pump is the main pump bearing—referred to frequently as the lower or radial bearing. Excessive damage to or scoring of this bearing results inevitably in pump failure. For the past five years, all Yeomans Heavy Duty Wet Pit Pumps have been equipped at no extra cost with the Lubri-Vac System, a positive lubrication method which reduces main pump bearing failures 90-95%—increases pump life 10 to 12 times.



**SERIES 8000
SCREENLESS
EJECTOR**

*for solids bearing wastes
and heavy
viscous liquids*



**SERIES 3000
BILGE
PUMP**

*for handling
solids-free
liquids*

Construction and Design Features Which Mean Longer Life—Improved Performance

Impeller—Enclosed type with Lubri-Vac vanes; mechanically balanced, keyed and locked securely to shaft.

Shaft—High carbon piston steel, turned, ground and polished, of liberal size, and tested on centers in lathe for true running.

Thrust Bearing—Weight of pump shaft, impeller and coupling is carried by an adjustable single row ball thrust bearing of the lubri-seal type, mounted above floor level. Adjustable bearing collar makes for easy adjustment of impeller clearance to compensate for wear as well as easy assembly and adjustment after repairs.

Guide Bearings—Renewable, grease or oil lubricated sleeve guide bearings, when required, spaced properly to prevent whip and vibration of shaft.

Stuffing Box at Floor Plate—Prevents escape of gases, moisture, or vapors from suspension pipe.

Pump Casing—Casing of heavy close-grained cast iron, streamlined to flow and rigidly attached to suspension and discharge pipes. Renewable sleeve bearing is located in casing just above the impeller.

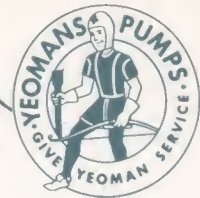
Coupling—Flexible type, statically balanced; no whip or unbalanced condition to heat and wear bearings.

Tongue and Groove Construction—Essential to proper alignment of rotating parts.

Suspension Plate and Pipe—Pump casing is hung from steel suspension plate by a heavy wrought steel suspension pipe, which encloses shaft. Duplex units are hung from individual suspension plates on main catch basin cover. Covers may be installed flush with the floor, and the required floor area is no larger than that of the cover. In the case of duplex units, one pump may be removed without disturbing the other.

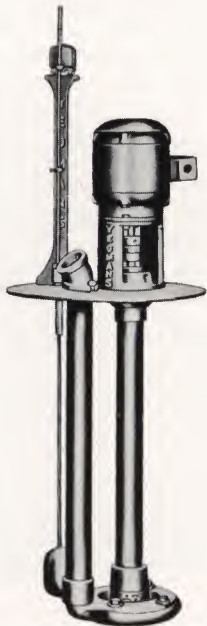
pumps and ejectors

wet pit centrifugals



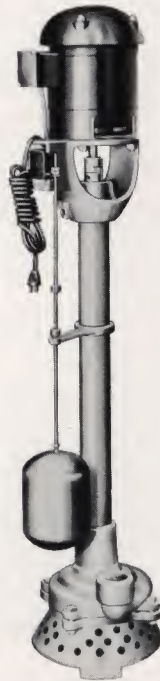
Series 3100 Bilge Pump is of the top suction design, suitable for intermediate duty on relatively long cycles. Unit is equipped with balanced bronze impeller with large water passages; flexible, self-adjusting coupling; liberal sized stainless steel shaft; heavy wrought steel suspension pipe; cast iron screen. The pump will handle water waste relatively free from grit and chemicals. Standard applications include industrial and utility plants, city buildings, drainage in municipal sewage and water treatment plants, recreation parks and pools.

Drain-Dri units are available in a capacity range up to 85 g.p.m. Impeller is hand finished, balanced, non-clogging type. Shaft is extra large, highly polished stainless steel, turned and ground. Coupling is flexible. Screen is of cast iron. Bearings include grease-lubricated ball thrust bearing, self-lubricating sleeve pump bearings. Control is enclosed butt-contact type heavy duty float switch, float is plastic or copper. Motors are ball bearing, heavy duty; index fit to motor support insures permanent alignment; drip proof; with built-in overload protection.



**SERIES 3100
BILGE
PUMPS**

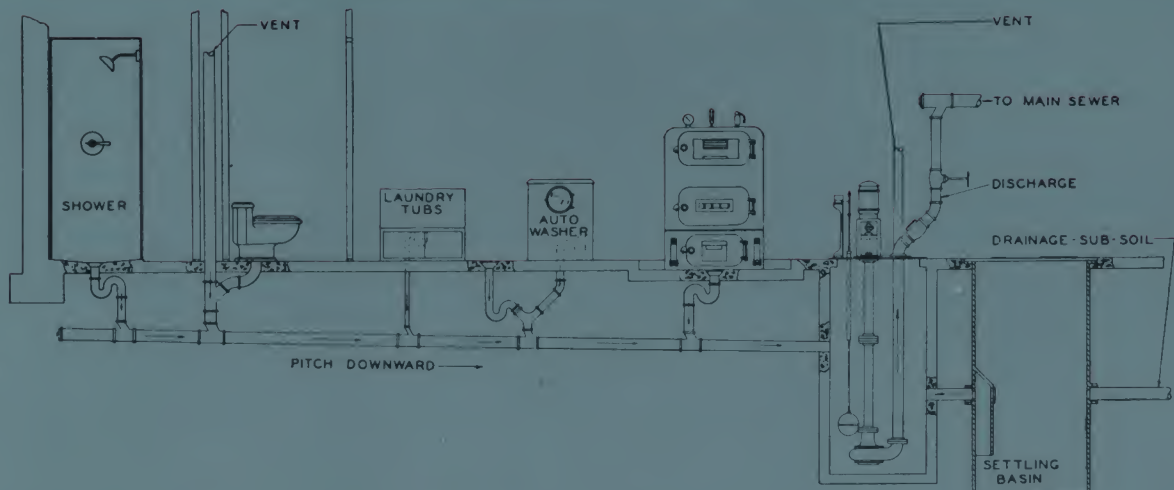
*top
suction
type*



**"DRAIN-DRI"
SUMP
PUMPS**

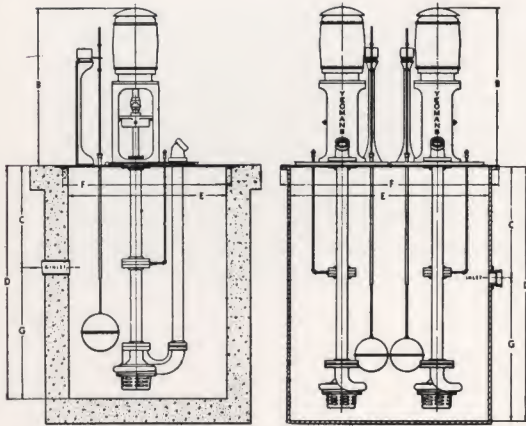
*pedestal-
mounted
type*

Typical basement diagram with drainage and sewage connections —shows correct use of settling basin. Use of settling basin where sump pump handles sub-surface drainage will prolong pump life. Note: Series 3000 pumps are not recommended for toilet wastes. If these wastes are to be handled, use Series 8000 Screenless Ejector.



SERIES 8000

screenless sewage ejectors
for solids-bearing drainage
or waste



dimensions and cover drilling

Single

| Pump ¹ Number | Size Each Disch. | B Max. | E | F | Bolt Holes ² | Diam. Bolt Circle |
|-----------------------------|------------------------|-----------|-----|-----|----------------------------|-------------------------|
| 8413-8447 | 4" | 45" | 36" | 40" | 4- $\frac{3}{8}$ " | 38" |
| *8513-8547 | 5" | 45" | 48" | 54" | 4- $\frac{3}{8}$ " | 51" |
| *8613-8647 | 6" | 45" | 48" | 54" | 4- $\frac{3}{8}$ " | 51" |
| *8883-8847 | 8" | 60" | 48" | 54" | 4- $\frac{3}{8}$ " | 51" |

Duplex

| Pump ¹ Number | Size Each Disch. | B Max. | E | F | Bolt Holes ² | Diam. Bolt Circle |
|-----------------------------|------------------------|-----------|-----|-----|----------------------------|-------------------------|
| 8413-8447 | 4" | 45" | 48" | 54" | 4- $\frac{3}{8}$ " | 51" |
| *8513-8547 | 5" | 45" | 60" | 65" | 4- $\frac{3}{8}$ " | 63" |
| *8613-8647 | 6" | 45" | 72" | 78" | 8- $\frac{3}{4}$ " | 75" |
| *8883-8847 | 8" | 60" | 72" | 78" | 8- $\frac{3}{4}$ " | 75" |

¹ Letter designations in pump numbers in selection charts have no bearing on dimensions in this table. Sump covers of special design or size are available.

² Bolt holes drilled $\frac{1}{8}$ " larger than bolts.

* Certain units in these sizes are equipped with main cover only—no pump plate.

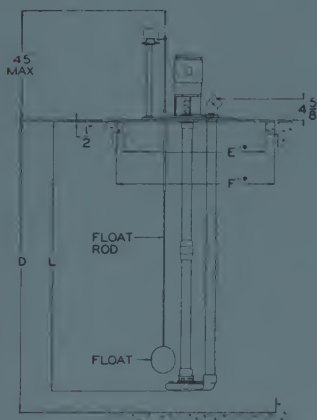
1750 R.P.M.

1150 R.P.M.

| Pump Cap. G.P.M. | Total Head in Feet above bottom of Basin or Sump. Motor Service Factor not exceeded at 5 ft. drop in head | | | | | Pump Cap. G.P.M. | Total Head in Feet above bottom of Basin or Sump. Motor Service Factor not exceeded at 5 ft. drop in head | | | | | |
|------------------------|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|----------------|
| | 15 | 30 | 40 | 50 | 75 | | 10 | 20 | 30 | 40 | 50 | 70 |
| 75 | 8413A 1 HP | 8413A 1 $\frac{1}{2}$ HP | 8413A 3 HP | 8423D 5 HP | 8423D 7 $\frac{1}{2}$ HP | 75 | 8415A $\frac{3}{4}$ HP | 8415A 1 HP | 8425D 2 HP | 8425D 3 HP | 8435C 5 HP | 8435C 10 HP |
| 100 | 8413A 1 HP | 8413A 2 HP | 8413A 3 HP | 8423D 5 HP | 8423D 7 $\frac{1}{2}$ HP | 100 | 8415A $\frac{3}{4}$ HP | 8425D 1 $\frac{1}{2}$ HP | 8425D 2 HP | 8425B 3 HP | 8435C 5 HP | 8435C 10 HP |
| 125 | 8413A 1 HP | 8413A 2 HP | 8413A 3 HP | 8423D 5 HP | 8423D 7 $\frac{1}{2}$ HP | 125 | 8415A $\frac{3}{4}$ HP | 8425D 1 $\frac{1}{2}$ HP | 8425D 3 HP | 8425B 5 HP | 8435C 7 $\frac{1}{2}$ HP | 8435C 10 HP |
| 150 | 8413A 1 $\frac{1}{2}$ HP | 8413A 3 HP | 8413A 3 HP | 8423D 5 HP | 8423D 7 $\frac{1}{2}$ HP | 150 | 8415A $\frac{3}{4}$ HP | 8425D 1 $\frac{1}{2}$ HP | 8425D 3 HP | 8425B 5 HP | 8435C 7 $\frac{1}{2}$ HP | 8435C 10 HP |
| 175 | 8413A 1 $\frac{1}{2}$ HP | 8413A 3 HP | 8413A 3 HP | 8423D 5 HP | 8423B 7 $\frac{1}{2}$ HP | 175 | 8415A 1 HP | 8425D 2 HP | 8425D 3 HP | 8425B 5 HP | 8435C 7 $\frac{1}{2}$ HP | 8435C 15 HP |
| 200 | 8413A 1 $\frac{1}{2}$ HP | 8413A 3 HP | 8423D 5 HP | 8423D 7 $\frac{1}{2}$ HP | 8423B 10 HP | 200 | 8415A 1 HP | 8425D 2 HP | 8425D 3 HP | 8425B 5 HP | 8435C 7 $\frac{1}{2}$ HP | 8435C 15 HP |
| 225 | 8413A 1 $\frac{1}{2}$ HP | 8413A 3 HP | 8423D 5 HP | 8423D 7 $\frac{1}{2}$ HP | 8423B 10 HP | 225 | 8415A 1 HP | 8425D 2 HP | 8425D 3 HP | 8425B 5 HP | 8435C 7 $\frac{1}{2}$ HP | 8435C 15 HP |
| 250 | 8513A 2 HP | 8513A 3 HP | 8523D 5 HP | 8523D 7 $\frac{1}{2}$ HP | 8523D 10 HP | 250 | 8515A 1 $\frac{1}{2}$ HP | 8525D 3 HP | 8525B 5 HP | 8525B 5 HP | 8535C 7 $\frac{1}{2}$ HP | 8535C 15 HP |
| 275 | 8513A 2 HP | 8513A 5 HP | 8523D 5 HP | 8523D 7 $\frac{1}{2}$ HP | 8523B 10 HP | 275 | 8515A 1 $\frac{1}{2}$ HP | 8525D 3 HP | 8525B 5 HP | 8525B 5 HP | 8535C 7 $\frac{1}{2}$ HP | 8535C 15 HP |
| 300 | 8513A 2 HP | 8513A 5 HP | 8523D 7 $\frac{1}{2}$ HP | 8523D 7 $\frac{1}{2}$ HP | 8523B 10 HP | 300 | 8525D 1 $\frac{1}{2}$ HP | 8525D 3 HP | 8525B 5 HP | 8535C 7 $\frac{1}{2}$ HP | 8535C 7 $\frac{1}{2}$ HP | 8535C 15 HP |
| 350 | 8513A 3 HP | 8523D 5 HP | 8523D 7 $\frac{1}{2}$ HP | 8523D 7 $\frac{1}{2}$ HP | 8523B 15 HP | 350 | 8525B 1 $\frac{1}{2}$ HP | 8525D 3 HP | 8525B 5 HP | 8535C 7 $\frac{1}{2}$ HP | 8535C 10 HP | 8535C 15 HP |
| 400 | 8613A 3 HP | 8623D 5 HP | 8623D 7 $\frac{1}{2}$ HP | 8623D 10 HP | 8623B 15 HP | 400 | 8625B 2 HP | 8625B 5 HP | 8625B 5 HP | 8635C 7 $\frac{1}{2}$ HP | 8635C 10 HP | 8635C 15 HP |
| 500 | 8613A 5 HP | 8623D 7 $\frac{1}{2}$ HP | 8623D 10 HP | 8623D 10 HP | 8623B 20 HP | 500 | 8625F 3 HP | 8625B 5 HP | 8635F 7 $\frac{1}{2}$ HP | 8635C 7 $\frac{1}{2}$ HP | 8635C 10 HP | 8635C 15 HP |
| 600 | | 8623F 7 $\frac{1}{2}$ HP | 8623F 10 HP | 8623D 15 HP | 8623F 20 HP | 600 | 8635F 3 HP | 8635F 5 HP | 8635F 7 $\frac{1}{2}$ HP | 8635E 10 HP | 8635C 15 HP | 8635C 20 HP |

SERIES 3100

bilge pumps . . . top
suction type



series 3100 — selection chart — 1750 r.p.m.

| | total head in feet above bottom of basin or sump | | | | | | | | | | |
|-----------------------------------|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | 5 | 10 | 15 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 |
| Cap. GPM Model No. Motor HP | 82 3101 $\frac{1}{2}$ | 73 3101 $\frac{1}{2}$ | 62 3101 $\frac{1}{2}$ | 50 3101 $\frac{1}{2}$ | 43 3101 $\frac{1}{2}$ | 35 3101 $\frac{1}{2}$ | 26 3101 $\frac{1}{2}$ | 10 3101 $\frac{1}{2}$ | | | |
| Cap. GPM Model No. Motor HP | 100 3102 $\frac{3}{4}$ | 92 3102 $\frac{3}{4}$ | 83 3102 $\frac{3}{4}$ | 73 3102 $\frac{3}{4}$ | 68 3102 $\frac{3}{4}$ | 65 3102 $\frac{3}{4}$ | 60 3102 $\frac{3}{4}$ | 55 3102 $\frac{3}{4}$ | 50 3102 $\frac{3}{4}$ | 44 3102 $\frac{3}{4}$ | 36 3102 $\frac{3}{4}$ |
| Cap. GPM Model No. Motor HP | 115 3103 1 | 109 3103 1 | 102 3103 1 | 93 3103 1 | 89 3103 1 | 85 3103 1 | 80 3103 1 | 75 3103 1 | 70 3103 1 | 66 3103 1 | 61 3103 1 |

1150 r.p.m.

| | | | | |
|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Cap. GPM Model No. Motor HP | 60 3105 $\frac{1}{2}$ | 50 3105 $\frac{1}{2}$ | 40 3105 $\frac{1}{2}$ | 20 3105 $\frac{1}{2}$ |
|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|

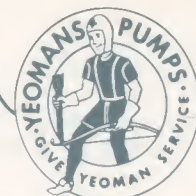
dimensions and cover drilling

| Motor HP | Single Covers | | | Duplex Covers | | |
|---------------|--|-----------------------|-----------------|-----------------------|-----------------|--------------------|
| | D | Recommended Dimension | Disch. Location | Recommended Dimension | Disch. Location | |
| $\frac{1}{2}$ | Bottom of pit should be 3" below inlet | E* | F | E* | F | G |
| 1 | | 36" | 40" | 42" | 46" | 4- $\frac{3}{8}$ " |

* Minimum basin diameter required for pumps: Single, with float switch on stand—18 inch; Duplex with float switch on stands—36 inch. Special float switches on stands can be mounted on basin covers.

pumps and ejectors

wet pit centrifugals

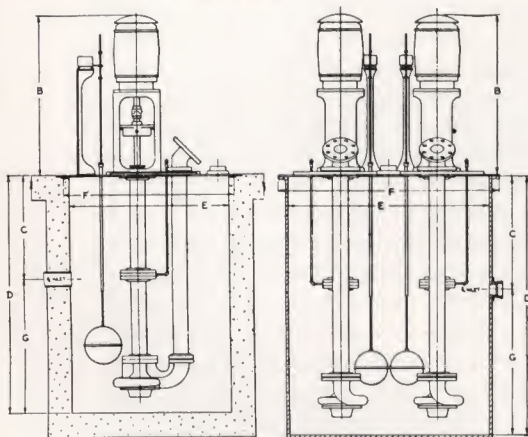


SERIES 3000

bilge or sump pumps for
solids-free drainage

1750 R.P.M.

1150 R.P.M.



dimensions and cover drilling

| Pump Number ² | Size Disch. Each | B Ap-prox. ³ | C D G | Single | | | Diam. Bolt Circle |
|--------------------------|------------------|-------------------------|---|--------|-----|-------------------------|-------------------|
| | | | | E | F | Bolt Holes ¹ | |
| 3153-4-5 | 1 1/2" | 30" | Determined by Depth of Drain Minimum "G" Dimension 3'0" | 30" | 34" | 4-5/8" | 32" |
| 3203-4-5 | 2" | 36" | | 36" | 40" | 4-5/8" | 38" |
| 3303-4-5 | 3" | 40" | | 36" | 40" | 4-5/8" | 38" |
| 3403-4-5 | 4" | 44" | | 48" | 54" | 4-5/8" | 51" |
| x3503-4-5 | 5" | 48" | | 48" | 54" | 4-5/8" | 51" |
| x3603-4-5 | 6" | 52" | | 48" | 54" | 4-5/8" | 51" |
| x3803-4-5 | 8" | 56" | | 48" | 54" | 4-5/8" | 51" |
| Pump Number ² | Size Disch. Each | B Ap-prox. ³ | C D G | Duplex | | | Diam. Bolt Circle |
| | | | | E | F | Bolt Holes ¹ | |
| 3153-4-5 | 1 1/2" | 30" | Determined by Depth of Drain Minimum "G" Dimension 3'0" | 36" | 40" | 4-5/8" | 38" |
| 3203-4-5 | 2" | 36" | | 42" | 46" | 4-5/8" | 44" |
| 3303-4-5 | 3" | 40" | | 48" | 54" | 4-5/8" | 51" |
| 3403-4-5 | 4" | 44" | | 60" | 65" | 4-3/4" | 63" |
| x3503-4-5 | 5" | 48" | | 60" | 65" | 4-3/4" | 63" |
| x3603-4-5 | 6" | 52" | | 72" | 78" | 8-3/4" | 75" |
| x3803-4-5 | 8" | 56" | | 72" | 78" | 8-3/4" | 75" |

¹ Bolt Holes drilled 1/8" larger than bolts.

² Letter Designations in Pump Number in Selection Charts have no bearing on above dimensions.

³ 3" diameter discharge and smaller, screwed connection (45° ell).

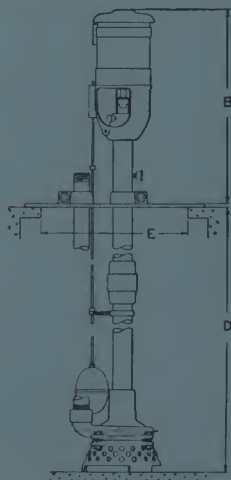
4" diameter discharge and larger, flanged connection (45° ell).

x Certain units in these sizes are equipped with main cover only—no pump plate.

| Pump Cap. G.P.M. | Total Head in Feet above bottom of Basin or Sump Motor Service Factor not exceeded at 5 ft. drop in head | | | | | | Pump Cap. G.P.M. | Total Head in Feet above bottom of Basin or Sump Motor Service Factor not exceeded at 5 ft. drop in head | | | | | |
|------------------|--|----------------|----------------|----------------|----------------|----------------|------------------|--|----------------|----------------|----------------|----------------|----------------|
| | 15 | 20 | 30 | 40 | 50 | 75 | | 10 | 15 | 20 | 25 | 30 | 40 |
| 15 | 3153G 1/2 HP | 3153G 1/2 HP | 3153G 1/2 HP | 3153G 1/2 HP | 3153M 1 1/2 HP | 3153M 2 HP | 15 | 3155G 1/2 HP | 3155G 1/2 HP | 3155M 1/2 HP | 3155M 1/2 HP | 3155M 3/4 HP | 3155N 1 1/2 HP |
| 25 | 3153G 1/2 HP | 3153G 3/4 HP | 3153G 3/4 HP | 3153G 1 HP | 3153M 1 1/2 HP | 3153M 2 HP | 25 | 3155G 1/2 HP | 3155G 1/2 HP | 3155M 1/2 HP | 3155M 1/2 HP | 3155M 3/4 HP | 3155N 2 HP |
| 35 | 3153G 3/4 HP | 3153G 3/4 HP | 3153G 3/4 HP | 3153G 1 HP | 3153M 1 1/2 HP | 3153M 2 HP | 35 | 3155G 1/2 HP | 3155G 1/2 HP | 3155M 1/2 HP | 3155M 3/4 HP | 3155M 3/4 HP | 3155N 1 1/2 HP |
| 50 | 3153G 3/4 HP | 3153G 3/4 HP | 3153G 1 HP | 3153G 1 1/2 HP | 3153M 1 1/2 HP | 3153M 2 HP | 50 | 3155G 1/2 HP | 3155G 1/2 HP | 3155M 1/2 HP | 3155M 3/4 HP | 3155M 3/4 HP | 3155N 2 HP |
| 60 | 3203G 3/4 HP | 3203G 3/4 HP | 3203G 1 HP | 3203G 1 1/2 HP | 3203M 1 1/2 HP | 3203M 3 HP | 60 | 3205G 1/2 HP | 3205G 1/2 HP | 3205M 3/4 HP | 3205M 3/4 HP | 3205M 1 HP | 3205N 2 HP |
| 75 | 3203G 3/4 HP | 3203G 3/4 HP | 3203G 1 HP | 3203M 1 1/2 HP | 3203M 2 HP | 3203M 3 HP | 75 | 3205G 1/2 HP | 3205M 1/2 HP | 3205M 3/4 HP | 3205M 1 HP | 3205N 1 1/2 HP | 3205N 2 HP |
| 100 | 3303G 1 HP | 3303G 1 HP | 3303G 1 1/2 HP | 3303M 2 HP | 3303M 3 HP | 3303N 5 HP | 100 | 3305M 1 HP | 3305M 1 HP | 3305M 1 1/2 HP | 3305N 1 1/2 HP | 3305N 3 HP | 3305N 3 HP |
| 125 | 3303G 1 HP | 3303G 1 1/2 HP | 3303M 1 1/2 HP | 3303M 2 HP | 3303M 3 HP | 3303N 5 HP | 125 | 3305I 3/4 HP | 3305I 1 HP | 3305N 1 1/2 HP | 3305N 1 1/2 HP | 3305N 2 HP | 3305P 3 HP |
| 150 | 3303I 1 1/2 HP | 3303I 1 1/2 HP | 3303I 2 HP | 3303I 3 HP | 3303N 3 HP | 3303N 7 1/2 HP | 150 | 3305I 3/4 HP | 3305I 1 HP | 3305N 2 HP | 3305N 2 HP | 3305N 3 HP | 3305P 3 HP |
| 175 | 3303I 1 1/2 HP | 3303I 1 1/2 HP | 3303I 2 HP | 3303I 3 HP | 3303N 5 HP | 3303N 7 1/2 HP | 175 | 3305I 3/4 HP | 3305I 1 1/2 HP | 3305N 2 HP | 3305N 2 HP | 3305N 3 HP | 3305P 3 HP |
| 200 | 3303I 1 1/2 HP | 3303I 2 HP | 3303I 3 HP | 3303I 3 HP | 3303N 5 HP | 3303N 7 1/2 HP | 200 | 3305I 1 HP | 3305I 2 HP | 3305N 2 HP | 3305N 3 HP | 3305P 3 HP | 3305P 5 HP |
| 225 | 3303I 1 1/2 HP | 3303I 2 HP | 3303I 3 HP | 3303I 5 HP | 3303N 5 HP | 3303N 7 1/2 HP | 225 | 3305I 1 HP | 3305P 1 1/2 HP | 3305P 2 HP | 3305P 3 HP | 3305P 3 HP | 3305P 5 HP |
| 250 | 3403I 1 1/2 HP | 3403I 2 HP | 3403I 3 HP | 3403I 5 HP | 3403N 5 HP | 3403N 7 1/2 HP | 250 | 3405I 1 1/2 HP | 3405P 1 1/2 HP | 3405P 3 HP | 3405P 3 HP | 3405P 3 HP | 3405P 5 HP |
| 275 | 3403I 2 HP | 3403I 3 HP | 3403I 3 HP | 3403P 5 HP | 3403P 5 HP | 3403P 7 1/2 HP | 275 | 3405I 1 1/2 HP | 3405P 2 HP | 3405P 3 HP | 3405P 3 HP | 3405P 3 HP | 3405P 5 HP |
| 300 | 3403I 2 HP | 3403I 3 HP | 3403I 3 HP | 3403P 5 HP | 3403P 5 HP | 3403P 10 HP | 300 | 3405I 1 1/2 HP | 3405P 2 HP | 3405P 3 HP | 3405P 3 HP | 3405P 5 HP | 3405P 5 HP |
| 350 | 3403I 2 HP | 3403I 3 HP | 3403I 5 HP | 3403P 5 HP | 3403P 7 1/2 HP | 3403P 10 HP | 350 | 3405P 2 HP | 3405P 3 HP | 3405P 3 HP | 3405P 5 HP | 3405P 5 HP | 3405Q 5 HP |
| 400 | 3503I 3 HP | 3503I 3 HP | 3503I 5 HP | 3503P 7 1/2 HP | 3503P 7 1/2 HP | 3503P 10 HP | 400 | 3505P 3 HP | 3505P 3 HP | 3505P 5 HP | 3505P 5 HP | 3505P 5 HP | 3505Q 7 1/2 HP |
| 500 | 3503I 5 HP | 3503I 5 HP | 3503P 7 1/2 HP | 3503P 10 HP | 3503P 10 HP | 3503P 15 HP | 500 | 3505Q 3 HP | 3505Q 3 HP | 3505Q 5 HP | 3505Q 5 HP | 3505Q 7 1/2 HP | 3505R 10 HP |
| 600 | 3603Q 7 1/2 HP | 3603Q 7 1/2 HP | 3603Q 7 1/2 HP | 3603Q 10 HP | 3603Q 10 HP | 3603Q 15 HP | 600 | 3505Q 3 HP | 3605Q 5 HP | 3605Q 5 HP | 3605Q 7 1/2 HP | 3805R 7 1/2 HP | 3805R 10 HP |

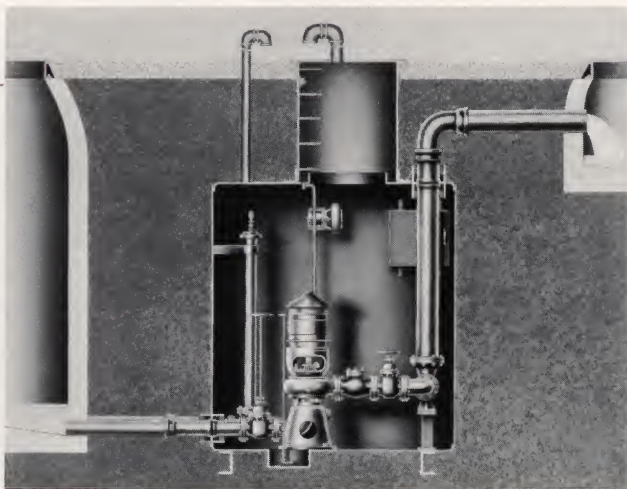
"DRAIN-DRY"

sump pumps —
pedestal-mounted type



| Ratings | | | | Size and No. | | Normal Sump Depth in ft. | Dimension "D" Max. Sump Depth | Dimension "A" and "B" Height of Pump | | Sump Opening "E" | Size Disch. Conn. |
|---------------|---------------|---------------|-------------|---------------|---------------|--------------------------|-------------------------------|--------------------------------------|---------------|------------------|-------------------|
| 1/4 H.P. Unit | 1/2 H.P. Unit | 3/4 H.P. Unit | 1 H.P. Unit | 1/4 H.P. Unit | 1/2 H.P. Unit | | | 1/4 H.P. Unit | 1/2 H.P. Unit | | |
| 15 | 20 | 24 | 28 | D-2 | SD-2 | 2 | 2'4" | 3'11" | 4'1" | 14" minimum | 1 1/2 |
| 25 | 18 | 41 | 25 | D-3 | SD-3 | 3 | 3'4" | 4'11" | 5'1" | dia. required | 1 1/2 |
| 38 | 15 | 55 | 22 | D-4 | SD-4 | 4 | 4'4" | 5'11" | 6'1" | for | 1 1/2 |
| 46 | 12 | 61 | 20 | D-5 | SD-5 | 5 | 5'6" | 7'1" | 7'3" | Single Unit | 1 1/2 |
| 50 | 10 | 67 | 18 | | SD-6 | 6 | 6'6" | | 8'3" | | 1 1/2 |
| 52 | 8 | 75 | 15 | | SD-7 | 7 | 7'8" | | 9'5" | 24" minimum | 1 1/2 |
| 55 | 5 | 80 | 12 | | SD-8 | 8 | 8'8" | | 10'5" | dia. required | 1 1/2 |
| | | 81 | 10 | | SD-9 | 9 | 9'8" | | 11'5" | for Duplex | 1 1/2 |
| | | 83 | 8 | | SD-10 | 10 | 10'10" | | 12'7" | | 1 1/2 |
| | | 85 | 5 | | | | | | | | |

complete "package" lift stations...



Yeomans can furnish complete, package type lift stations, automatic in operation and needing but little attention equipped with either centrifugal pumps or pneumatic ejectors. Complete centrifugal underground pumping stations can be supplied in standard and flood-proof types. Danger of seepage from underground water is eliminated by a welded steel watertight chamber which covers both pump chamber and entrance tube. Flood-proof types have an extra drum which extends to a point below the electrical equipment and controls. The motor and controls are located in the air-locked space in the upper part of the chamber. A ventilating blower is provided to minimize condensation and each unit has a drain pit valve and inlet and exhaust piping for the ventilation.

sewage and industrial waste treatment systems...

*for Motels Trailer Parks Rural Schools
Isolated Institutions Small Communities
Industrial Plants Hospitals*

The small sewage treatment plant for isolated institutional, industrial and residential developments presents problems which can be summarized into five requirements beyond the basic one of a high degree of purification of domestic and industrial wastes:

1. Economy in both first and operating cost.
2. Compact, attractive, requiring the minimum of space and suitable for location near the community without creating a public nuisance or "eye-sore."
3. Tailored for the job in that the equipment was designed for small plants and is not a "cut-down" version of large metropolitan installations.
4. Simple to maintain and requiring only the attention of any "handy man" devoting some time daily to general housekeeping and minor supervisory and maintenance work.
5. Guaranteed satisfaction of a type associated with a manufacturer whose integrity of design, manufacturing standards, and conscious purpose for customer satisfaction exceeds a mere equipment warrantee.

Yeomans offers a complete line of equipment developed specifically to meet these needs of small treatment plants. In addition to the treatment equipment charted on page 15, raw sewage lifting pumps and preliminary items also are available.

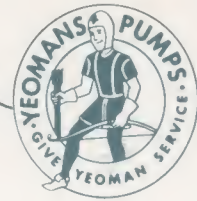


The Cavitator System—a new secondary treatment process—provides low cost treatment yet accomplishes from 90-95% B.O.D. removal.

The Cavitator System provides a solution for the sewage treatment problem of motels, rural schools, and subdivisions where there is a low flow of domestic waste or peak loads are experienced. The Cavitator also is ideally suited for industrial and processing plants where the waste liquid to be treated contains a high B.O.D.—as would be found in the waste from cheese factories, dairies, meat and food packing plants.

Three outstanding features of the Cavitator System are:

1. High oxygen transfer efficiency.
2. Short aeration period.
3. Exceptional performance on relatively low flows.
4. Low installation and operating costs.



for subdivision lift stations

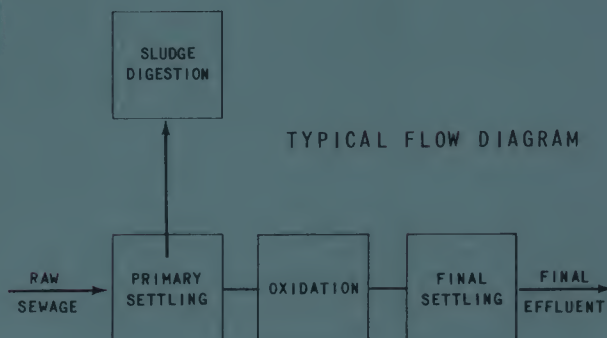
For subdivision lift stations, where sewage flows range from 30 g.p.m. to 1000 g.p.m., pneumatic ejectors are recommended. The reasons are simple . . . ejectors cannot clog; there's no septic action, no odor, no gas. There is nothing to get out of order with a pneumatic ejector. Three types of pneumatic ejectors are available: the Shone, Expelsor, and PACKEX (See Page 8).

For installations where space is a limiting factor, Yeomans can furnish a Shone Package Type Ejector. An electrically controlled unit, this ejector is complete, self-contained, factory-assembled with built-in auto-

matic controls. Air compressor is integrally mounted. No electrical work is necessary on the ejector itself as all control devices are factory-assembled and wired. Shone non-clogging check and gate valves are provided on both inlet and discharge.

Expelsor Package Type Ejectors also are available. These units are self-contained, factory-assembled with integrally mounted air compressor. Control consists of electrodes. Requires the minimum of space. When Expelsor Package Type Ejector is properly positioned, it is ready for wiring into the power circuit and for connection of inlet and discharge pipes.

either primary treatment or complete treatment



Yeomans Equipment for Small Sewage Plants
Equipment and Catalog Reference Numbers

| | |
|------------------|--|
| Primary Settling | <p>SPIRAGESTER (combined clarification and sedimentation) Bulletin # 6768.</p> <p>CLARIFIERS: Spiraflo (# 6791). Streamline (# 6750); "CD" and "CDH" (# 6702).</p> |
| Oxidation | <p>THE CAVITATOR SYSTEM</p> <p>HI-CONE Mechanical Aerators</p> <p>AERIFIER (combined aerator and clarifier)</p> <p>BIOLOGICAL FILTERS: "Water-Wheel" (# 6554)</p> <p>Aero-Filter (# 6571); Rotary Distributor (# 6504)</p> |
| Final Settling | Same equipment as clarifiers for primary settling |
| Digestion | Digester mechanism—Scum Breaker |



The degree of sewage treatment for any community or industrial plant depends entirely upon the ability of the receiving stream to provide sufficient dilution to insure clean downstream conditions. Population is not a deciding factor.

Basic equipment for primary treatment is sedimentation basins to accomplish the solids removal and digestion equipment to reduce the complex organic compounds to inoffensive liquids and gaseous intermediate and/or end products.

In a complete treatment plant there is a secondary process of oxidation of remaining organic materials.

engineering service

Your request for literature, for further information, or for a call by a Yeomans representative will have immediate attention.

If there is a representative near you (see list below), you may prefer to get in touch with him direct.

If you have a special problem, it is recommended that you submit by letter all pertinent information which will be referred to Yeomans Research and Engineering Department for prompt attention.

For industrial and waste treatment equipment, the diversified experiences of Yeomans sanitary engineers may help you in the solution of these problems.

Architects and engineers are invited to request typical layouts of component parts of a treatment plant for consideration in designing plants to meet their client's needs and satisfy State Board of Health Standards.

There's no obligation—suggestions regarding Yeomans equipment are gladly given without cost.

sales and service representatives....

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Birmingham, A. J. Pittman†
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1425 S. Atlantic Blvd.—Angelus 1-2181
Millbrae (San Francisco),
DeLaval Turbine Pacific Co.
201 E. Millbrae Ave.—Oxford 7-4001

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Denver 17, Steam Engineering
Service Co.
620—12th St.—Acoma 2-2463

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Republic 7-6116

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1903 Jones St.—Webster 6373

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